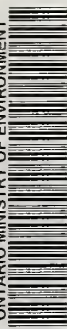


ONTARIO MINISTRY OF ENVIRONMENT



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1971 OPERATING SUMMARY

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HAILEYBURY

WATER POLLUTION CONTROL PLANT

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Haileybury : water pollution
control plant.

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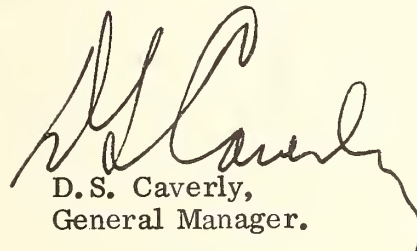


Water management in Ontario

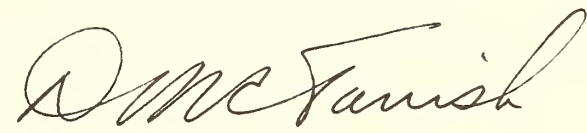
Ontario
Water Resources
Commission

We are pleased to submit for your consideration a summary of operation during 1971 of the water pollution control plant serving your community.

This operating summary contains parameters normally used to measure plant performance and loading, as well as relevant cost data. Because of the concern over eutrophication of our lakes and of the requirement, in many parts of Ontario, to remove the major contributing factor, results of analysis for phosphorus appear in this summary.



D.S. Caverly,
General Manager.



D.A. McTavish, P. Eng.,
Director,
Division of Plant Operations.



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HAILEYBURY

WATER POLLUTION CONTROL PLANT

1971 ANNUAL OPERATING SUMMARY

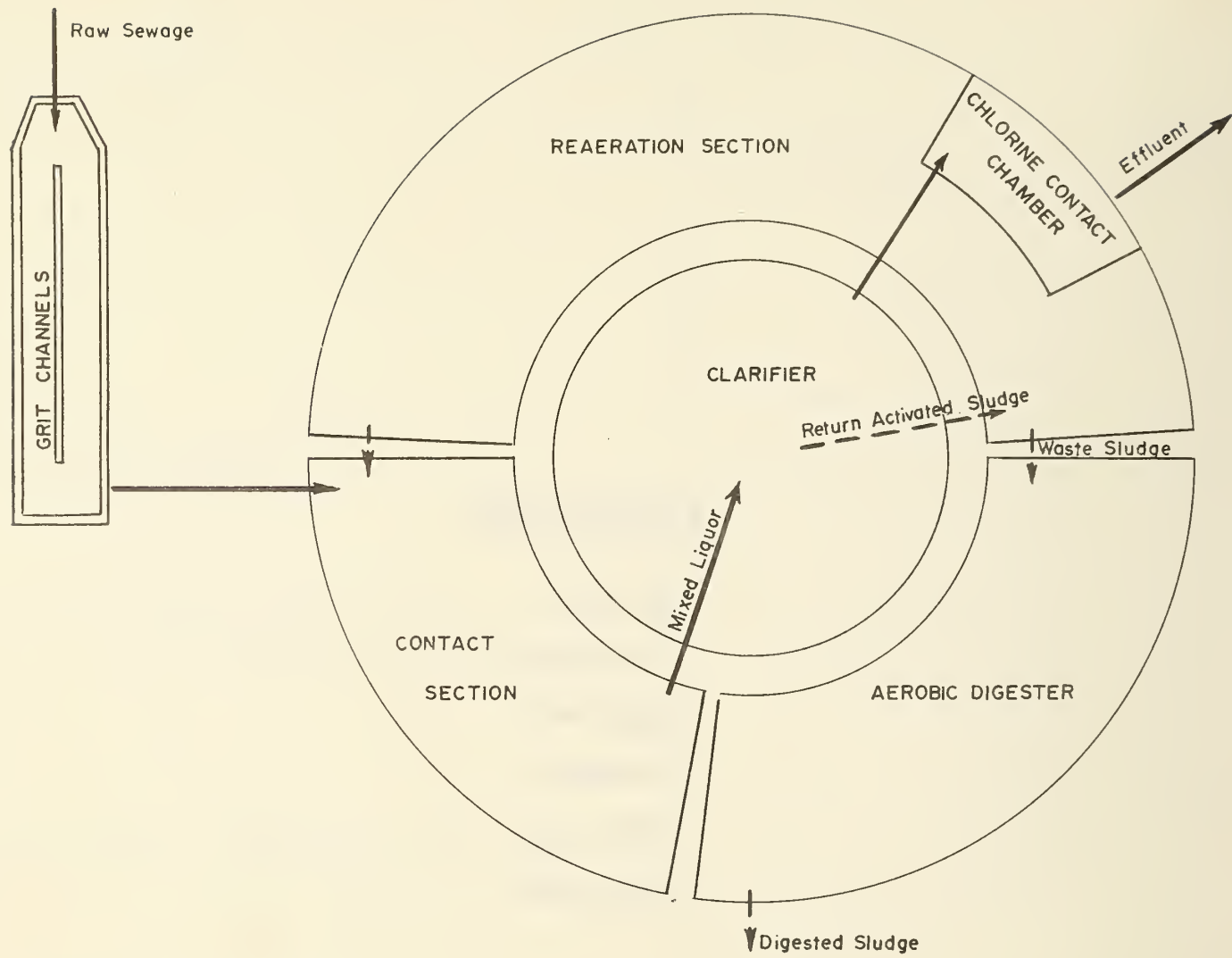


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HAILEYBURY WPCP

PROJECT NO.	1-0069-67	<u>PUMPING STATION</u>	<u>AEROBIC DIGESTER</u>
DESIGN FLOW	0.350 mgd	Two - 625 IGPM @ 61 ft TDH One Diesel engine	Volume: 15,000 ft ³ or 93,400 gal Loading: 4.3 ft ³ /capita
BOD - Raw Sewage - Removal	170 mg/l 90%	<u>GRIT REMOVAL</u>	<u>SEDIMENTATION</u>
SS - Raw Sewage - Removal	200 mg/l 90%	Type: Manually cleaned channels Size: Two	Volume: 12,100 ft ³ or 75,500 gal Detention: 5.7 hr @ 350,000 Igpd Loading: Surface weir
		<u>SCREENING</u>	<u>CHLORINE CONTACT CHAMBER</u>
		Bar Screen 1 3/4" openings	Volume: 8600 gal Detention: 35 min @ 0.35 mg
		<u>AERATION</u>	
		Volume: 8,300 ft ³ or 52,400 gal Detention: 3.6 hr @ 0.35 mgd Diffusers: S & L Aluminum	
		<u>REAERATION SECTION</u>	
		Volume: 21,330 ft ³ or 132,900 gal Detention: 7.6 hr @ max. return rate of 417,600 Igpd	

'71 Review

GENERAL

The Haileybury plant is a 350,000 gallon per day prefabricated, field-erected, unit utilizing the contact stabilization process. Treated effluent is discharged to Lake Timiskaming. The plant is operated jointly with several other facilities in the area.

During the year there were no major mechanical or process problems. The flow meter was out of service most of January and part of December.

EXPENDITURES

The total operating cost for the year was \$20,838.77. Salaries accounted for 47 percent of this cost.

PLANT FLOWS and CHLORINATION

The average daily flow of 390,000 gallons was 111 percent of the nominal design capacity. This represented an increase of 40,000 gallons over 1970. The final effluent was disinfected with 2949 pounds of chlorine between April and November to give a residual of 0.5 mg/l.

PLANT EFFICIENCY

The average raw sewage BOD and suspended solids concentrations were 168 and 300 mg/l respectively. The average BOD and suspended solids reductions were 95 and 97 percent respectively and represent excellent treatment for a secondary facility. Average effluent BOD and suspended solids concentrations were 8 mg/l and 9 mg/l respectively.

A total of 9.75 tons of BOD and 17.25 tons of suspended solids was removed during the year. A total of 874 cubic feet of grit was removed from the raw sewage. This represents an average of 6.5 cubic feet of grit per million gallons of sewage treated which is above average and is usually indicative of combined sewers. The average MLSS concentration of 4035 mg/l and F/M ratio of 0.14 are within the accepted limits of good aeration tank operation.

SLUDGE DIGESTION and DISPOSAL

A total of 332,000 gallons of raw waste activated sludge was pumped to the digester. The digester was cleaned out, and a total of 116,000 gallons of digested sludge was removed by tank truck. The average solids content was 14.9 percent which is extremely heavy. Volatile solids content was 55 percent representing good digestion.

CONCLUSIONS

The project is operating very efficiently at flows exceeding the design capacity of 350,000 gallons per day. Efforts are being made by the Town to reduce the amount of storm water reaching the plant. If this program is unsuccessful expansion should be initiated.

ONTARIO WATER RESOURCES COMMISSION

HAILEYBURY SEWAGE WORKS SYSTEM

PROJECT NO. 1-0069-67

BALANCE SHEET

AS AT DECEMBER 31, 1971

(UNAUDITED)

ASSETS

ACCOUNTS RECEIVABLE	\$ 12,664.99
FIXED ASSETS (at cost)	461,890.62
	<hr/>
TOTAL ASSETS	\$474,555.61
	<hr/> <hr/>

LIABILITIES AND EQUITY

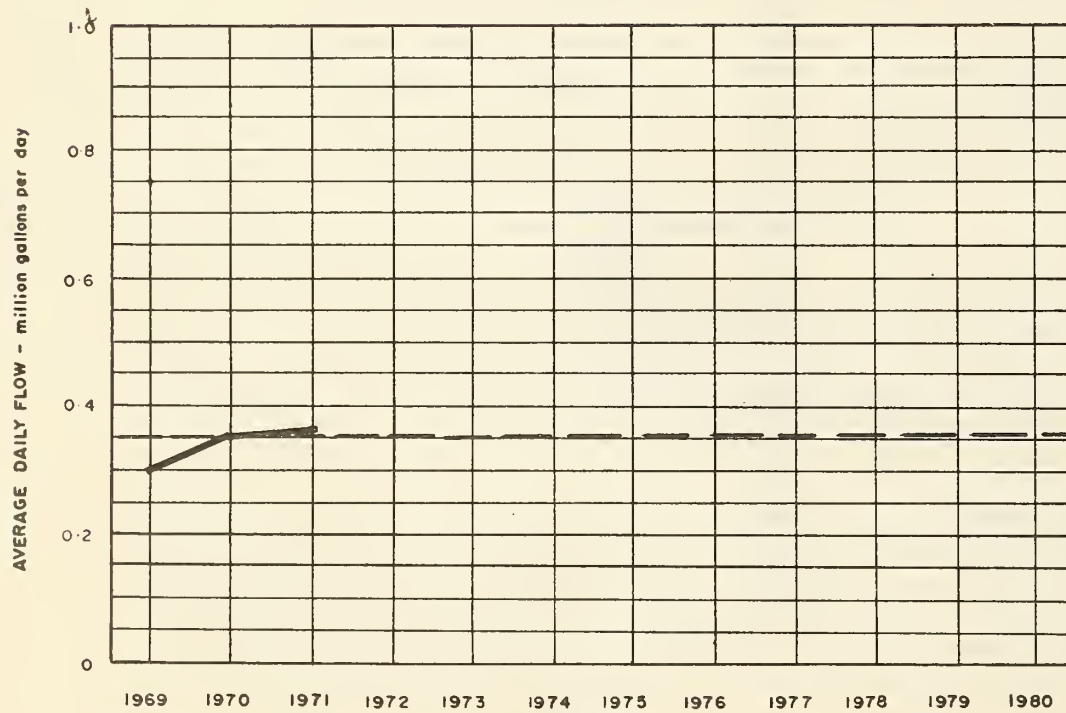
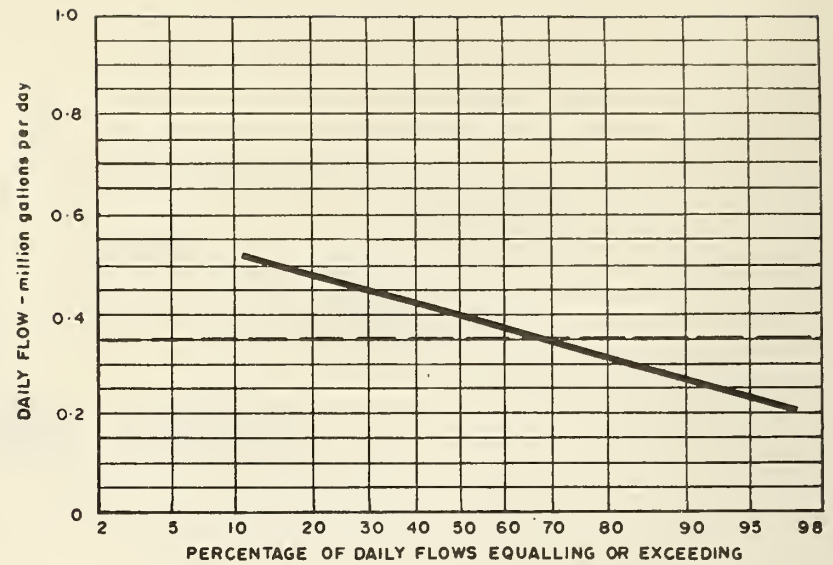
CURRENT LIABILITIES	\$ 11,828.01
LONG TERM DEBT	364,466.43
EQUITY	
Contributed	80,236.13
Amortized principal on long term debt	4,383.44
Earned Surplus	
Surplus at beginning of year	\$ 6,258.66
Surplus for the year 1971	\$ 7,382.94
	<hr/>
TOTAL LIABILITIES AND EQUITY	\$474,555.61
	<hr/> <hr/>

Note

Prepared on an accrued basis.

PROCESS DATA

FLOWS



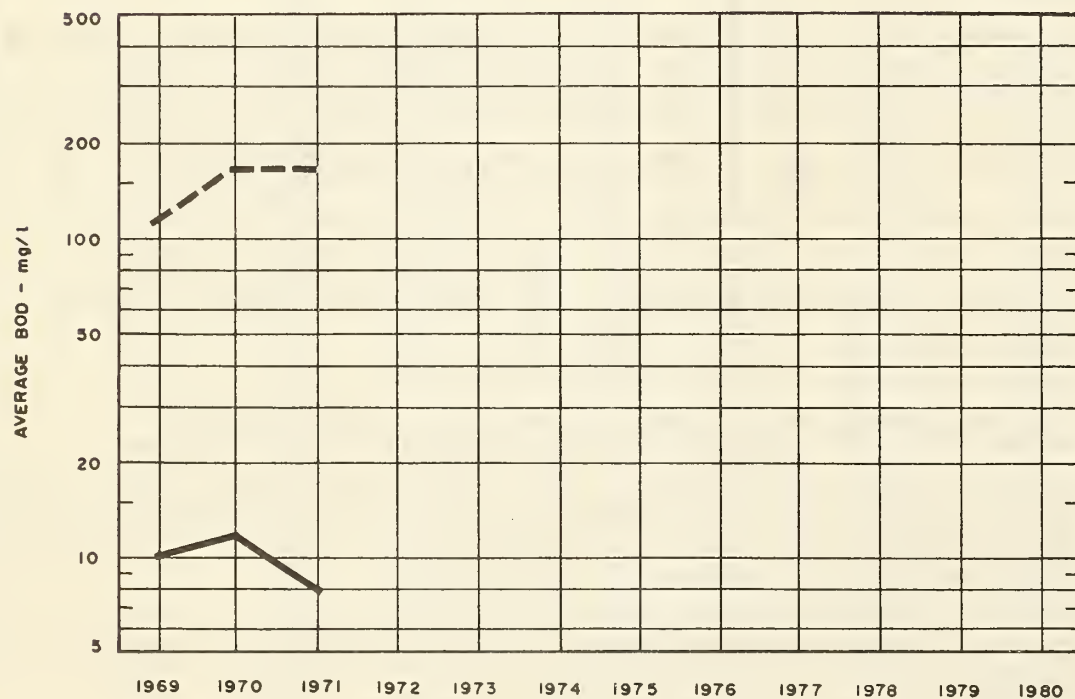
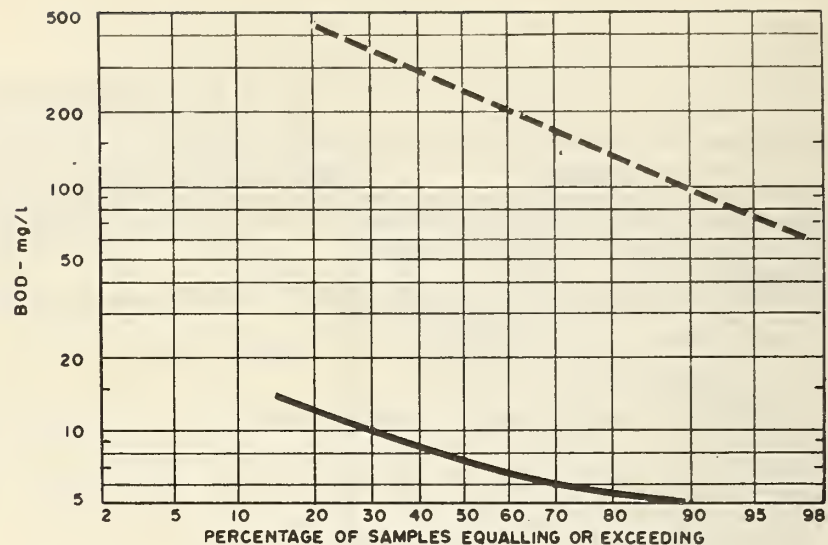
PLANT PERFORMANCE

MONTH	FLOWS				BIOCHEMICAL OXYGEN DEMAND				SUSPENDED SOLIDS				TOTAL PHOSPHORUS		
	TOTAL FLOW	AVERAGE DAY	MAXIMUM DAY	MAXIMUM RATE	INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT	REDU
	million gallons	mil gal	mil gal	mgd	mg/l	mg/l	%	10 ³ pounds	mg/l	mg/l	%	10 ³ pounds	mg/l as P	mg/l as P	%
JAN	.8 a	.37	.38	.49	70	11	94	-	140	15	89	-	9.8	3.5	64
FEB	9.6	.34	.43	.58	360	6	98	34.2	980	10	99	93.6	-	-	-
MAR	13.1	.42	.62	.92	260	6	98	20.2	480	5	99	62.2	-	-	-
APR	17.4	.58	.71	.76	-	-	-	-	-	-	-	-	-	-	-
MAY	16.5	.53	.57	.72	140	10	92	21.4	160	10	94	24.7	8.5	2.9	66
JUNE	12.2	.41	.50	.72	260	20	92	29.2	410	10	98	48.7	9.8	3.1	68
JULY	13.2	.43	.49	.66	30	4	97	16.7	100	5	95	12.6	5.0	-	-
AUG	9.6	.31	.41	.58	90	9	90	7.8	100	5	95	9.1	4.3	4.6	0
SEPT	8.8	.29	.36	.58	180	5	97	15.4	270	5	98	23.4	13.0	3.1	76
OCT	8.4	.27	.39	.52	-	-	-	-	-	-	-	-	-	-	-
NOV	11.6	.39	.53	.81	160	5	97	17.9	210	10	95	23.2	8.8	-	-
DEC	5.3 b	.33	-	-	130	6	95	12.6	150	10	93	14.3	12.0	1.7	86
TOTAL	126.5 est.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AVG.	-	.39	MAXIMUM .71	MAXIMUM .92	168	8	95	19.5	300	9	97	34.5	8.9	3.1	65
No. of Samples	-	-	-	-	10	10	-	-	10	10	-	-	8	6	-

a - 2 days'

b - 16 days'

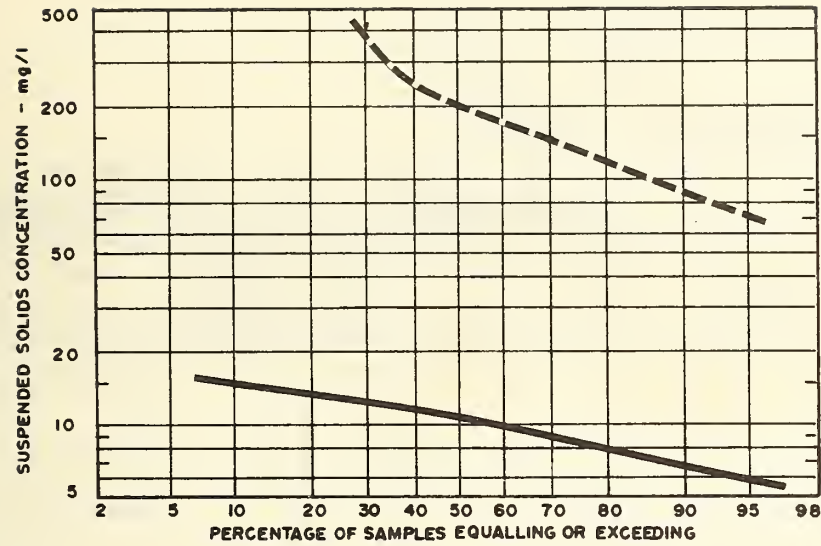
BIOCHEMICAL OXYGEN DEMAND



PLANT INFLUENT - - - - -

PLANT EFFLUENT _____

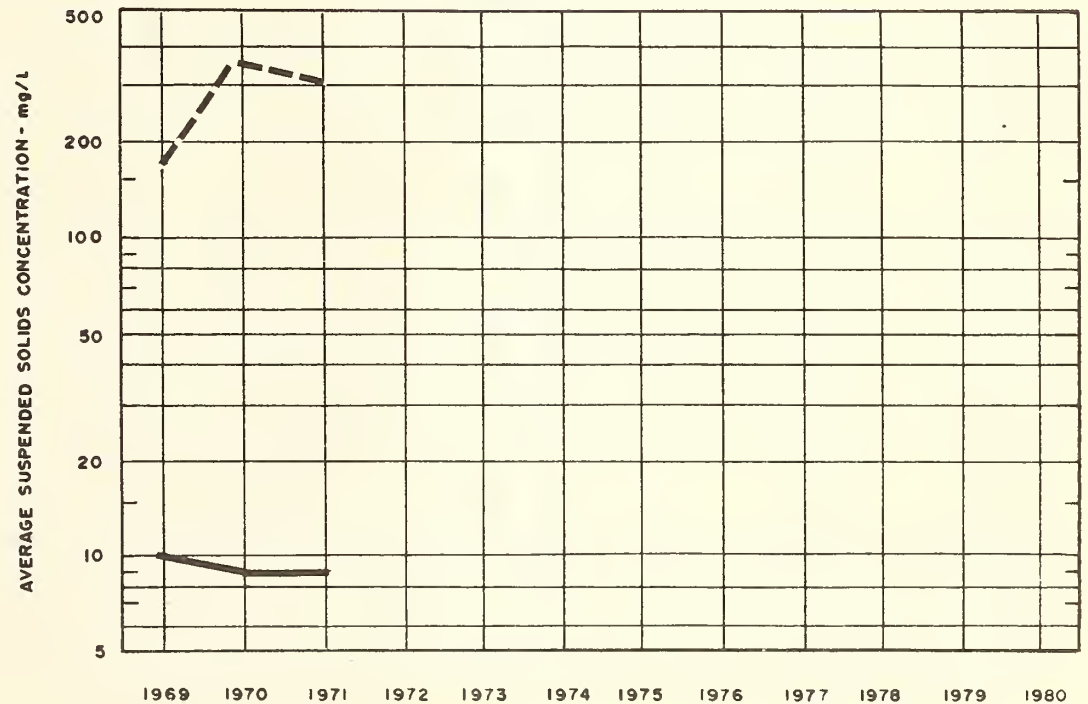
SUSPENDED SOLIDS



PLANT INFLUENT

PLANT EFFLUENT

—————



TREATMENT DATA

MONTH	GRIT	CHLORINATION		AERATION			WASTE SLUDGE			AEROBIC DIGESTER			
	QUANTITY REMOVED	CL ₂ USED	AVG. DOSAGE	MLSS. CONC	F/M	AIR USED	QUANTITY	SUSPENDED SOLIDS	VOL. SOLIDS	QUANTITY REMOVED	SUSPENDED SOLIDS	VOL. SOLIDS	AMOUNT HAULED
	cubic feet	pounds	mg/l	mg/l	day ⁻¹	1000 ft ³ lb BOD	10 ³ gallons	mg/l	%	10 ³ gallons	mg/l	%	cubic yards
JAN	34	-	-	8910	.05	1.0	27.0	-	-	0	12370	50	0
FEB	80	-	-	3300	.28	.5	19.0	-	-	0	15070	-	0
MAR	111	-	-	3430	.24	.5	28.0	-	-	0	10890	58	0
APR	44	* 186	2.2	2060	-	-	10.3	-	-	0	-	-	0
MAY	69	* 453	2.8	2990	.19	.9	24.0	-	-	0	18900	56	0
JUNE	86	* 247	3.7	4100	.19	1.0	33.0	-	-	25	18000	54	148
JULY	64	* 502	3.8	4060	.10	2.3	34.5	-	-	0	17700	53	0
AUG	67	* 492	5.1	5200	.04	5.0	14.1	-	-	45	17600	54	268
SEPT	85	455	5.2	4240	.09	2.5	31.5	-	-	0	19060	55	0
OCT	94	381	4.5	3770	-	-	31.5	-	-	0	-	-	0
NOV	79	133	3.4	3360	.13	1.7	69.0	-	-	46	11200	-	273
DEC	61	-	-	3000	.10	1.8	10.0	-	-	0	8280	59	0
TOTAL	874	2849	-	-	-	-	331.9	-	-	116	-	-	689
AVG.	6.5 cu. ft/mil gal	407	3.9	4035	.14	2.2	27.7	-	-	-	14909	55	-

* - April 16 - Nov. 8

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